

Remarks:

Reconsideration and allowance of the above-referenced application are respectfully requested.

The drawings stand objected to as allegedly failing to comply with 37 CFR 1.84(p)(5) because they include reference signs (A, B, C, and D) not mentioned in the description. The specification has now been amended to include these reference signs, which indicate process flow in FIGS. 4, 5A, and 5B. In view of this amendment, Applicant respectfully requests withdrawal of this objection to the drawings.

The drawings stand objected to under 37 CFR 1.83(a) as allegedly failing to show every feature of the invention specified in the claims. In particular, the programmable control engine that has been programmed using a control line to enable latching of a command into a microcode program controller as recited in claim 17 is allegedly not shown in the drawings. Applicant respectfully calls attention to FIGS. 2A and 2B, reference numerals 202, 250 and 260, which illustrate the subject matter of claim 17. Supporting description can be found in paragraphs 30 and 43 in the detailed description. In view of FIGS. 2A and 2B illustrating the subject matter of claim 17, Applicant respectfully requests withdrawal of this objection to the drawings.

Claims 1-33 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Kreifels (U.S. Pat. No. 6,418,059). This rejection has been obviated by the claim amendments made herein. Independent claim 1 has been amended to include the limitation of original claim 4. Independent claim 9 has been amended to include the limitation of original claim 12.

Claim 20 has been amended to be an independent claim and to include limitations from original claim 18. New claim 34 depends from claim 20 and includes the limitation from original claim 19. Claim 32 has been amended into independent form and to include limitations from original claim 31. New independent claim 36 includes limitations from original claims 25 and 28. New claim 37 depends from new claim 36.

As amended, independent claims 1, 9, 20, 32, and 36 include varying a programming number of the storage cells based upon a cell level to be programmed by a pulse. Using this claimed technique, the performance of a non-volatile memory device can be improved for a given program pump size, or the program pump size can be reduced, while still achieving a given target performance. The art of record fails to teach or suggest varying the programming number of the storage cells based upon the cell level to be programmed by the pulse, and thus independent claims 1, 9, 20, 32, and 36 should be allowable. Additionally, dependent claims 2, 5, 10, 13, 34, and 37 are patentable based on the above argument and their own merits.

Claim 6 has been amended to be an independent claim and to include limitations from original claim 1. Claim 14 has been amended to be an independent claim and to include limitations from original claim 9. Claim 21 has been amended to be an independent claim and to include limitations from original claim 18. New claim 35 depends from claim 21 and includes the limitation from original claim 19. Independent claim 25 has been amended to include the limitation of original claim 26. Claims 27-28 have been amended to depend from claim 25. Claim 33 has been amended to be an independent claim and to include limitations from original claim 31.


As amended, independent claims 6, 14, 21, 25, and 33 include varying a programming number of the storage cells based upon whether a program pulse comprises an initial pulse or a re-pulse. Using this claimed technique, the performance of a non-volatile memory device can be improved for a given program pump size, or the program pump size can be reduced, while still achieving a given target performance. The art of record fails to teach or suggest varying the programming number of the storage cells based upon whether the program pulse comprises an initial pulse or a re-pulse, and thus independent claims 6, 14, 21, 25, and 33 should be allowable. Additionally, dependent claims 7-8, 15-17, 22-24, 27-30, and 35 are patentable based on the above argument and their own merits.

In view of the above amendments and remarks, therefore, all of the claims should be in condition for allowance. A formal notice to that effect is respectfully requested.

The \$420 fee to cover the additional claim fees is included. Please apply any necessary charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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